California Energy Commission

ETHANOL OPPORTUNITIES IN CALIFORNIA

Governors Ethanol Coalition

Cedar Rapids, Iowa

June 22, 1999

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California Energy Commission

Today s Discussion Includes

- Brief overview of California s phase-out of MTBE (Executive Order D-5-99)
- The potential for California biomass/ethanol industry
- Update on proposed amendments to California s gasoline regulations

Executive Order D-5-99 by Governor Davis found:

- MTBE poses a threat to surface water, ground water, and drinking water
- MTBE may present potential health problems
- Reformulated gasoline can be produced without the use of MTBE

CEC Responsibilities under Executive Order

- Coordinate activities with four other state agencies for implementation
- Develop a timetable by July 1, 1999, for removal of MTBE from gasoline
- Work with Calif. Air Resources Board and petroleum industry to supply MTBE-free gasoline year round to Lake Tahoe area

Executive Order - D-5-99 Potential For Ethanol

- Report on the potential for development of a California waste-based or other biomass ethanol industry
- Evaluate what steps, if any would be appropriate to foster waste-based or other biomass ethanol development in California should ethanol be found to be an acceptable substitute for MTBE

Report Scope Will:

- Evaluate waste biomass resources in California and possible benefits
- Assess energy crop resources in California
- Review biomass-to-ethanol conversion options
- Estimate biomass-to-ethanol production potential

Report Scope Will:

- Examine the economics of biomass-to-ethanol production
- Identify issues that could affect development of a biomass ethanol industry
- List potential actions by California government and other entities that would aid the development of a viable industry

Challenges Facing Industry

- High production costs and capital requirements
- Difficulty in obtaining financing
- Uncertain motor fuel regulations
- Infrastructure, distribution and storage constraints

Challenges Facing Industry

- Risks of commercially untested technologies
- Local permitting and Siting requirements
- Difficulty of obtaining consistent , low cost feedstocks
- Possible fuel quality concerns

Potential Benefits of Developing Industry

- Sustainable rural employment
- Reduced greenhouse gas emissions
- Improved forest health and productivity
- Diversion of waste materials from landfill

Potential Benefits of Developing Industry

- Improved air quality by reduction of open burning
- Domestically produced renewable fuel
- Non petroluem-based fuel source

Peer Review Group

- Federal Government - U.S. DOE, Oak Ridge National Laboratory, SANDIA, and U.S. Department of Agriculture
- State & Local Government - Integrated Waste Management Board, Dept. of Food and Agriculture, Air Resources Board, and County of Ventura

Peer Review Group

- Private Industry, Associations & Other - Chevron, TEMBEC, Environment and Energy Study Institute, Renewable Fuels Association, MASADA, and University of Sherbrooke

Ethanol Report Schedule

Draft Report	August 13, 1999
Public Workshop	September 10
Revised Draft	October 22
Public Hearing	November 18
Final Report	December 15
Report to Governor	December 31, 1999

Proposed Amendments to California s RFG Regulations

- California Air Resources Board Hearing - June 24, 1999
  - rescission of winter time oxygen requirement in Lake Tahoe Basin
  - require labeling of pumps dispensing gasoline containing MTBE on statewide basis

Refinery Infrastructure Capability

- MTBE is important blending component with many desirable characteristics
  - Helps refiners achieve compliance with California Phase II gasoline
- Most California refiners designed facilities to use MTBE
- All would require modifications to produce gasoline without the use of MTBE

Distribution Infrastructure Issues

- Ethanol requires special handling (unlike other oxygenates)
- Has affinity for water & separation can occur
- Requires segregated tanks at refineries and terminals
- Blending equipment for loading racks
- Terminal modifications to receive ethanol

Distribution & Infrastructure Modifications - Key Findings

- Installation of equipment to reduce volatility of the final product
- Less than 30% of the terminals in California have the capability of dispensing gasoline containing ethanol
  - need for special blending equipment
  - need for new rail connections & off-loading racks
  - permitting and construction to upgrade remaining terminals could take up to two years

Areas of Uncertainty

- Potential removal of federal minimum oxygenate requirement (after 1999)
- Viability of ethanol as a potential replacement for MTBE
- Proposed Phase 3 Reformulated Gasoline Specifications (by December 1999)

For More Information...

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